SUPPLEMENT
VOLUME 86
pp. 10181–10343

Proceedings
OF THE
National Academy of Sciences
OF THE UNITED STATES OF AMERICA

CODEN PNAS A6

ANNUAL SUBJECT AND AUTHOR INDEXES

Proceedings
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Information for Contributors: See pp. i–viii of issue number 1, January 1989.

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Back Issues: Volumes 82–86, January 1985 and thereafter, are available from the Circulation Office of the PROCEEDINGS. The price of a single issue is $20.00.

Second class postage paid at Washington, DC, and at additional mailing offices. PRINTED IN THE USA

PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA (ISSN-0027-8424) *is published semimonthly by* THE NATIONAL ACADEMY OF SCIENCES, *2101 Constitution Avenue, Washington, DC 20418.*

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POSTMASTER: Send address changes to: PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, 2101 Constitution Ave., Washington, DC 20418.

Proceedings
OF THE
National Academy of Sciences
OF THE UNITED STATES OF AMERICA

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Tsujimoto, Y. 2771
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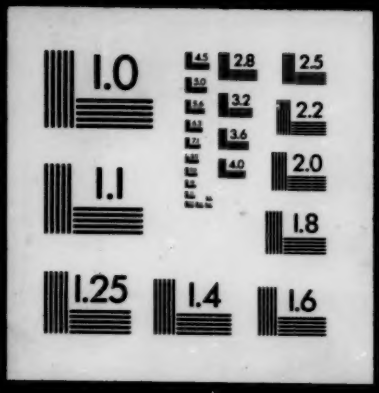
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